DEUCE AIGOL

Punching of numbers for input.

A number on the form A x 10^{B} is punched as:-

where:-

+ signs need not be bunched.

A decimal point may occur anywhere within A, or be omitted if not required. If B = 0, the comma and B need not be punched.

The comma must immediately follow the last digit of A.

Carriage Return (CR) Line Feed (CF) or Space characters terminate a number (but not on Letter Shift).

It is permissible to put spaces between the comma and the first character of the exponent, or between the sign and first digit of A or B, but not elsewhere within the number.

The characters (,), =, and all characters on Letter Shift (except Figure Shift) are ignored. (i.e. TFMP (Π E) = 123.45 etc. is possible).

Mon-numerical characters, apart from . and , (and those covered in sections 10.2.5 and 10.2.7 above) are invalid, and will cause a failure if read.

A must have not more than 9 digits, excluding non-significant zeros before the point. (This is not fully checked).

Output of results

The procedure statement:-

print
$$(X, i, f)$$
;

causes X (integer or real) to be printed in fixed or floating form according to the values of the parameters i and f, as follows:-

- i > O X printed in <u>fixed point</u> decimal, with i places before the point and f places after the point. Non-significant zeros before the decimal point are replaced by spaces. The sign immediately precedes the first digit printed. If X has more figures before the point than allowed for by i, then the extra digits will be printed, but the layout of the page may be spoiled.
- $\underline{f} < 0$ Decimal point and fractional part omitted.
- $\underline{i} = 0$ X printed in <u>floating point</u> decimal with one figure before the point and/

DEUCE ALGOL

and f after.

i = 0 As i = 0, but -i spaces are left before the first digit printed.

The values of i and f are taken modulo 16.

Each number printed out is followed automatically by three spaces.

NUMBERS DO NOT AUTOMATICALLY START ON A NEW LINE.

<u>Layout of output</u> This is left under the user's control. In addition to the use of the print parameters there are two further facilities:-

newline. The procedure statement

newline;

causes the sequence Figure shift, Carriage Return, line feed to be punched on the output tape. (N.B. A newline is performed automatically at the beginning of each program.)

space. This procedure statement

space;

causes one space to be left in the output.

Preparing a tape.

Every tape should begin with -

At least 8" of blank tape (leader) - this facilitates loading into the papertape reader - followed by:-

CRIF, followed by

or vice-versa

upper or lower case shift, as required.

Double spacing is recommended; this produces a much more easily read text.

Indentation according to block level is also recommended, for the same reason.

The final end of a program must be followed by the end of message character — (no printing characters are allowed between end and —).

should be followed by at least 4" of tape. This is necessary for the brake on the paper-tape reader.

29th November, 1963.